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Prevalence of MSD among women vendor in Ima market: A cross-sectional study

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Abstract:
Background: *WHO definition of Musculoskeletaldisordersishealthproblemsassociatedwith muscles, tendons, bony skeleton, cartilage and ligaments.WHO estimatesthat 40% of people over the age of 60 yearssufferfrom MSD and about 80% of the people have hadlow back pain at some point in theirlife.Objectives : To determine the prevalence of musculoskeletaldisorders and hypertension amongwomenvendors in Imamarket and to assess the association of musculoskeletaldisorders and hypertension with background characteristics. Methods : A cross sectional studyconducted at ImaMarket, Imphal West of Manipur from 26st Feb to 23rd March, 2019. Sample size calculatedwas 404. Data werecollectedusing a structured questionnaire whichconsists of socio-demographiccharacteristics, personal habits, Nordic MSD questionnaires. Descriptive statisticssuch as percentage, mean and standard deviationwasused. Chi-square and independent t test wereused and p value of <0.05 wasconsidered as statisticallysignificant. Results: The meanage of respondentswas 59.44 ± 10.92 years. 81.9 % of the respondents have MSD. Knees (46.3%), Lower back (45.5%) washighestnumberwith MSD in body parts. 56.4 % consulted a physician for MSD in the past 1 year. The meannumber of hrsworking /daywas 7.73 ± 1.526. There wassignificant association withage group and MSD (P<0.05). Thosewhohadsignificant trauma in the pasthad a significant association with MSD (P<0.05). Conclusions :OverallPrevalence of MSD among the womenvendorswasvery high, four women out of every 5 womenvendorshadMSD.*

Key words : *MSD, Nordic MSD, WRMSD, Womenvendors*

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I. Introduction

WHO definition of Musculoskeletal disorders is health problems associated with muscles, tendons, bony skeleton, cartilage and ligaments. Musculoskeletal conditions comprise more than 150 diagnoses that affect the locomotor system as listed in the International Classification of Diseases (ICD-10).WHO estimates that 40% of people over the age of 60 years suffer from MSD and about 80% of the people have had low back pain at some point in their life.While in India, epidemiological studies indicate the community-based prevalence of about 20%, occupation-specific prevalence found to be as high as 90% in various studies. The study was conducted todetermine the prevalence of musculoskeletal disorders and hypertension among women vendors in Ima market.

II. Material and Methods

Study Design: A Cross-sectional study
Study Location: Imphal, Ima market is the only market in India where women are the only vendors since last 500 years. There are three Ima markets located in the heart of Imphal. Women vendors have to register with the Imphal Municipal Corporation.
Study Duration:26th February 2019 to 23th March 2019.
Sample size: 404 participants.
Sample size calculation: The sample size was estimated on the basis of a single proportion design using formula $N=4pq/l^2$, where p=80,5% from study conducted by Vasanth D et al [4,] q= 100-p, $l^{2=}$Margin of absolute allowable error and non-response rate of 10%. The calculated sample size was 275,sample size for the study was 404. Purposive Sampling was used forselection of the study participants

Study Subjects: The study population were the women vendors of thethree all women market
1. Women vendors aged ≥ 18 years,
2. Women vendors registered with the Imphal Municipal Corporation.

Exclusion criteria:

1. Those who were absent on the days of visit.

Procedure methodology:

After written informed consent was obtained, a pretested questionnaire with Nordic MSD questionnaire was used to collect the data. The questionnaire included socio-demographic characteristics such as age, living status, annual income,menopause status, distance between workplace and home, mode of conveyance, physical activity and lifestyle habits like smoking.

MSD using Nordic MSD questionnaire which is validated and standardized questionnaire for MSD.

Musculoskeletal questions

1. Do you have any musculoskeletal problem
2. Is there seasonal variation of pain/sign and symptoms:
3. Was there any significant trauma in the past:
   a. what kind of trauma and which body parts was affected
4. Number of working hours per day:
5. Number of years of vending:
6. Is/Was there any musculoskeletal disease among your family members:

Data was obtained by face to face interview using the above-mentioned questionnaire and Nordic MSD questionnaire and blood pressure questions. Nordic MSD questionnaire was validated questionnaire for MSD with pictorial representation of the body parts. The area of pain or any morbidity was marked in the pictures. The team was divided into 4 groups, each group with the questionnaires.

Statistical analysis:

Data collected were checked for consistency and completeness and were entered in IBM SPSS version 21.0 software. Data was presented in percentages, mean with standard deviation and 95% confidence interval**.** Chi-square test was used to test the significance of association between outcomes and background characteristic. A p-value < 0.05 was considered as statistically significant.

III. Result

Total number of participants were 404.The maximum age of the participant was 89years;the minimum was 30 years and mean age 0f 59.44 with SD±10.92. The maximum number of participants in the 46-60 range and least in the those below 30 years. About 85.8 % of the participants had attained menopause.

85.4 % of the participants traveled by Diesel auto, the mean distance from place of vending to home was 4.49 kms with maximum distance of 44kms and minimum of 200 meters. Most of the participants had average vending of 7 hours. 25% of the participants had lifted heavy objects in the past.

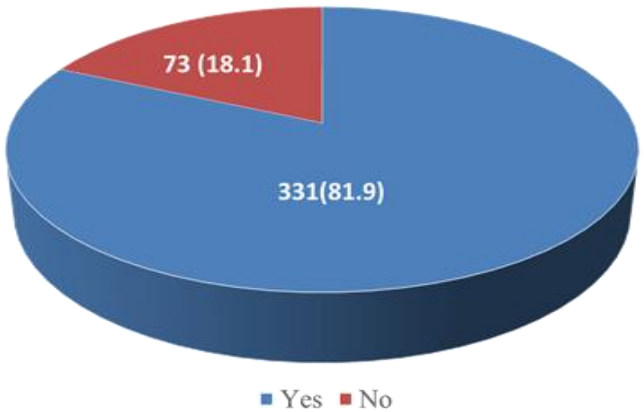

Figure 10. Distribution of participants by response to " Do you have Musculoskeletal Disorder" N=404(n,%)

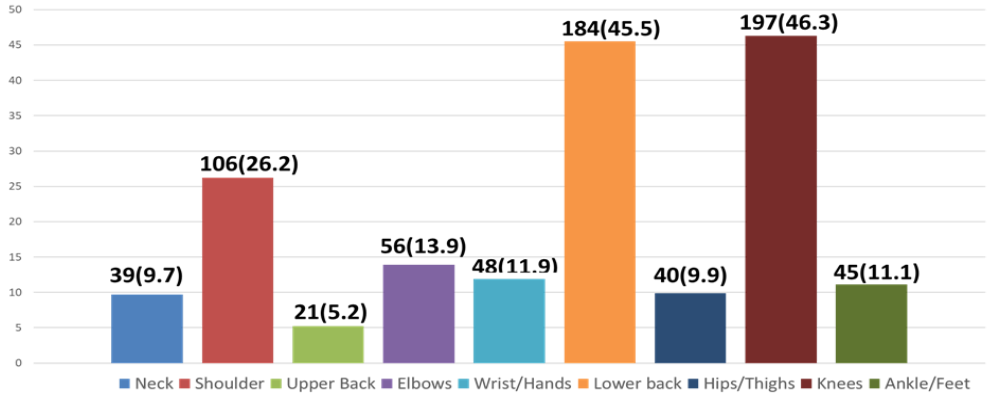

Figure 11. Distribution of frequency of participants with MSD in different body parts.

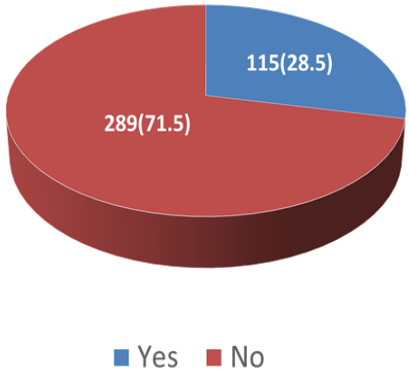

Figure 13. Distribution of Participants by response to "Any significant trauma in the past" N=404(n %)

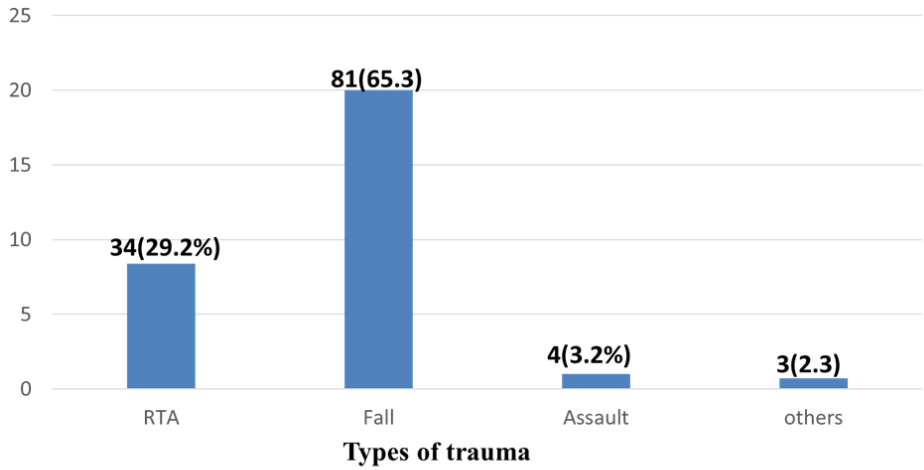

Figure 14. Distribution of participants by the types of trauma N=404 (n%)

Table no1:Association between age groups and MSD(n=404)

Age groups (in years)	Musculoskeletal Disorder		p value
	Yes n (%)	No n (%)	
30-45	27(69.2)	12(30.8)	0.030
46 and above	304(83.3)	61(16.7)	

Table no 2:Association between lifting heavy objects and elbow MSD (n=404)

Lifting of heavy **objects**	ElbowMSD		P value
	Yes n(%)	No n(%0	
Yes	21(20.8)	80(79.2)	0.020
No	35(11.6)	268(88.40	

Table no 3: Association between menopause status and upper back MSD (N=404)

Menopausestatus	UpperbackMSD		p value
	Yes n(%)	No n(%)	
Yes	14(4.1)	332(95.9)	0.011
No	7(12)	51(88)	

IV. Discussion

MSD was highly prevalent among the women vendors in the present study. This may due to fact that the number of hours of vending at average was found to seven hours which could have been the reasons for MSD due to inactivity. Meanwhile lifting of heavy objects, past trauma and menopause statuswere among the causes that could have led to MSD among the participants.

The present study was cross-sectional design conducted among women vendors of Ima market in Imphal from February to March 2019.The study,shows that majority of the participants about 81.9 % had some form of MSD and Hypertension. Majority of the participants suffered from lower backache and knee pain. Half of the participants had consulted a physician for MSD.This findingis similar to Devi G and co-researcherwhoreported the prevalence of MSD among women tea workers in Niligiri, Tamil Nadu which was as high as 85%[2]. In the present study, the body parts most affected by MSD were low back pain and knees which was reported in the studies by conducted by Chee HL et al in Malaysia.[3]. Where else a study conducted by Kolgiriand coworkers for work related MSD using postural analysis tool RULA found a significant association between age and work experiences as it was found in the present study.[5]

A cross sectional study was conducted by Telaprolu and coworkers al in Hyderabad in 2013 which looked at the risk of work-related musculoskeletal diseases is about 4 times more among workers with greater than 20 years of work experience than those with 11-20 years and is about 2 times as those with 1-10 years of work respectively, this was found in the present study.[6]

There was some significant association between age groups and MSD, MSD body parts like elbow with lifting of heavy objects and upper back MSD and menopause status in the present study and that found by Mukhopadhyay S.

The present study saw high prevalence of MSD among women vendors in the all women Ima market due to long hours of vending, lifting of heavy objects and their menopausal status.

V. Conclusion

Overall prevalence of MSD was high among the women vendorsof Ima market. Knees and low back pain were the most common MSD among the vendors.One third of the participants had hypertension and were on antihypertensive medication. There was significant association between age group, lifting of heavy objects, menopause status and MSD, MSD body parts. Education program about the risk factor of MSD and hypertension should be implemented. Ergonomic intervention like avoidance of sitting in one position for long time, proper way of lifting heavy objects and shifts in vending hours.

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